A B S T R A C T

NEW SCIENTIFIC KNOWLEDGE FROM SPACE MISSIONS

THERE IS A WEALTH OF SCIENTIFIC KNOWLEDGE THAT HAS BEEN OBTAINED FROM SPACE MISSIONS THAT COULD NOT, WITHOUT GREAT DIFFICULTY, OR IN SOME CASES NOT AT ALL, BE OBTAINED FROM EARTH-BASED LABORATORIES. THIS TALK WILL FOCUS ON THE KNOWLEDGE OBTAINED FROM THE UNMANNED SPACE PROBES STARTING WITH THE RANGER AND SURVEYOR MISSIONS TO THE MOON IN THE 1960'S, AND INCLUDING THE MARINER MISSIONS TO MARS, VENUS AND MERCURY WHICH PRODUCED CRYSTALLINE KNOWLEDGE OF THE TERRESTRIAL PLANETS. WHAT WE LEARNED SCIENTIFICALLY FROM THE VOYAGER MISSION TO JUPITER AND THE OUTER PLANETS WILL ALSO BE COVERED. FINALLY, THIS TALK WILL BRIEFLY COVER WHAT SCIENTIFIC RESULTS WE EXPECT FROM THE CURRENT GALILEO SPACECRAFT WHICH IS HEADING FOR A JUPITER RENDEZVOUS IN DECEMBER 1995. WE WILL ALSO COVER THE SCIENTIFIC OBJECTIVES OF THE CASSINI MISSION WHICH IS CURRENTLY UNDER DEVELOPMENT AND IS DESIGNED TO INVESTIGATE THE SATURN ENVIRONMENT. THE LAUNCH IS SCHEDULED FOR 1997.